Agile
Version e6.1

ORACLE

Oracle Agile Engineering Data Management

MCAD Connector for Pro/Engineer – Version 3.7.3.0
User Manual

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Preface

The Oracle documentation set includes Adobe® Acrobat™ PDF files. The Oracle Technology Network (OTN) Web site (http://www.oracle.com/technology/documentation/agile.html) contains the latest versions of the Oracle Agile Engineering Data Management files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Oracle Documentation folder available on your network from which you can access the documentation (PDF) files.

Note	To read the PDF files, you must use the free Adobe Acrobat Reader™ version 7.0 or later. This program can be downloaded from the Adobe Web site (http://www.adobe.com).

Note	Before calling Agile Support about a problem with an Oracle Agile EDM manual, please have the full part number, which is located on the title page.

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Release Notes

Any last-minute information about Oracle Agile EDM can be found in the Release Notes file on the Oracle Technology Network (OTN) Web site (http://www.oracle.com/technology/documentation/agile_eseries.html)

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Chapter 1

Introduction

Documentation

This documentation is intended to be used with the integration. It does not give in-depth information on the concepts and usage of Agile e6.1 or the CAD system.

For more information on that refer to the respective documentation.

Note The information in this document is based on a standard installation.

Constraints

- Modification of the CAD structure and objects (e.g. create, move, delete, copy, etc.) is done in the CAD system. It represents the "Engineering Master".
- Agile e6.1 is the "Organizational Master" for managing CAD objects/structures with independent objects in the construction and release process of a company (e.g. single parts, drawings, 3D models) but not for individual CAD base elements (e.g. lines, surfaces, bodies, etc.).

Agile Pro/Engineer Integration

The Agile e6.1 Pro/Engineer integration (ECP) solution extends the CAD system Pro/Engineer to enable a controlled storing of models and drawings in Agile e6.1.

The main features of the ECP Connector are:

- Save

  Saves native CAD data from the current session into Agile
- Load

  Loads native CAD data from Agile into the current CAD session
- Manage Change

  Allows users to control checkout reservation and revisioning
- Update Properties

  Updates property (attribute) values in the title box between the CAD files and Agile using the so-called parameter transfer functionality
- Duplicate

  Creates a duplication of an existing Agile object (parts/documents) and stores it under a new name

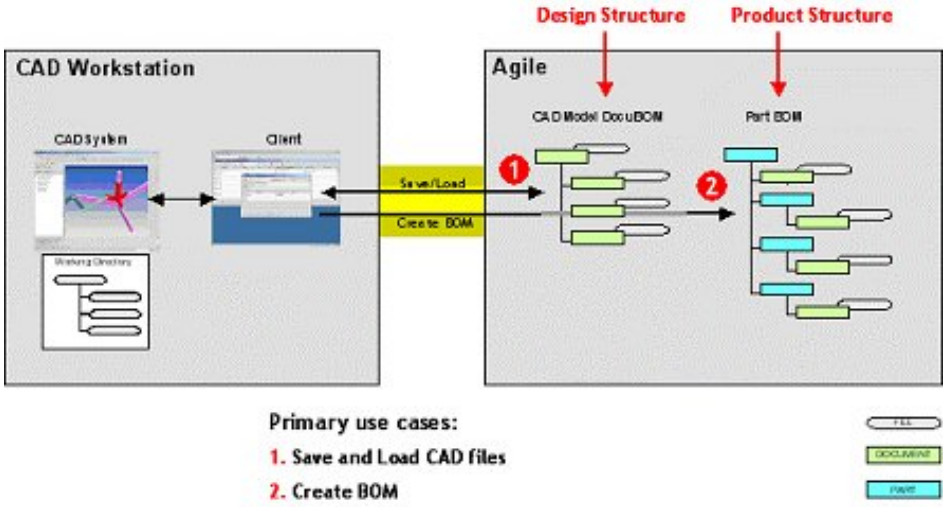
- Create Viewables

  Creates neutral format files, such as PDF, to be used for viewing, plotting, or manufacturing

- BOM Publication

  Automatically creates and updates the Part BOM based on the CAD design structure, with Agile change control

Overview of the Basic Processes



Save and Load CAD Files

CAD designs are created within the CAD system environment, with files in a working directory (which may be local or network attached). The designer saves into Agile e6.1, which creates a design structure that mimics the structure of the CAD assembly. The native CAD files are attached to this design structure, which is used as the basis for loading and re-saving the CAD designs. Since Agile e6.1 manages a centralized repository, all CAD designers in the enterprise have access to these files,under control of Agile e6.1 roles and privileges. Individual designers can set checkout reservations in Agile e6.1 when they load files into their CAD session. Additional files such as viewables (PDF, TIFF, etc.) can be attached to the Design Structure.

Create a BOM

The designer may use the Create BOM command to create or update the Agile e6.1 BOM, representing the Product Structure either for all substructures or only flat (i.e. only the first level).

To avoid unnecessary manual entries in the BOM, it is possible to merge standard parts and items of auxiliary parts. This function is used when an item representing the design structure already exists.

Creating and updating the BOM is performed in the background. The BOM can also be updated with interaction. This enables to modify the appropriate information in Agile e6.1.

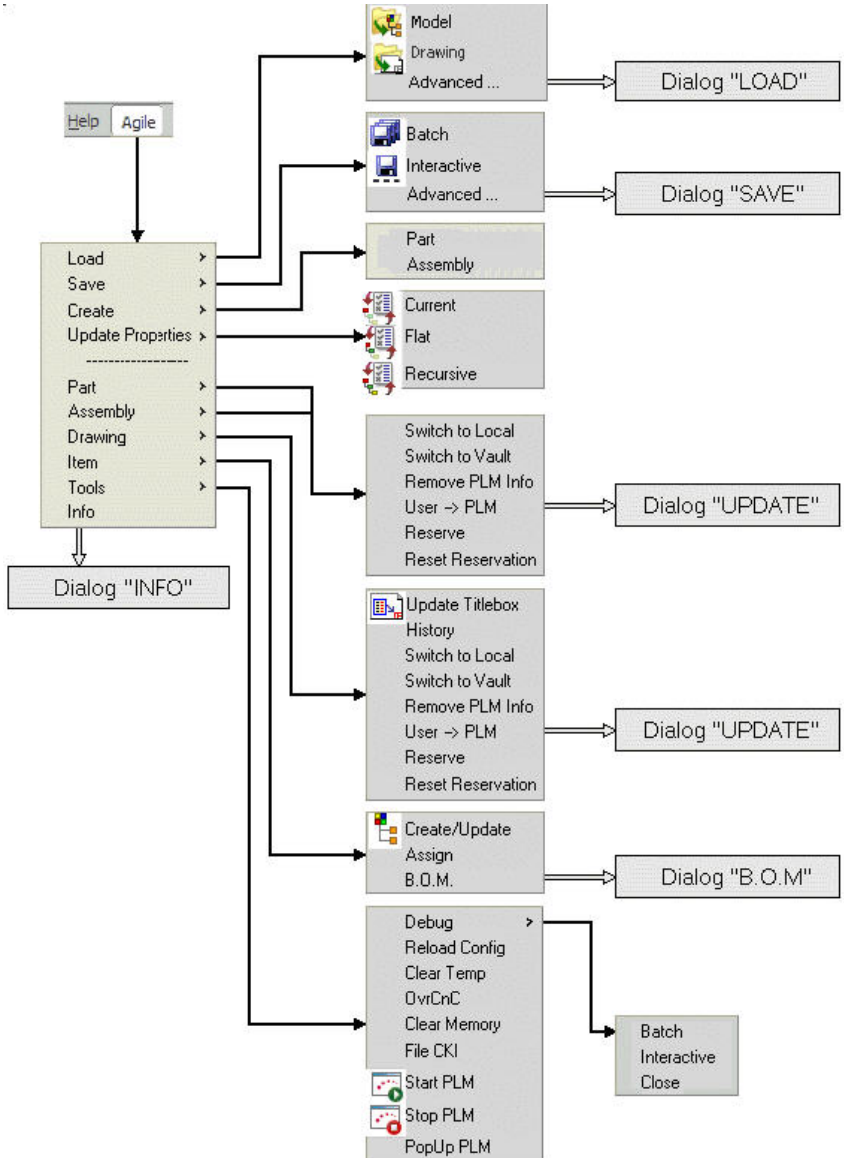
Chapter 2

Key Features

Menu

A main menu has been added for Agile e6.1 to the standard Pro/Engineer menu. This allows accessing the features of the integration. It is available within all modules of Pro/Engineer.

The standard menu structure of the integration is shown in the following diagram.



Additionally, a brief help description for each function is shown in the Pro/Engineer message window.

Functional Features of the Standard Menu PLM

Load

Load Model	Retrieves a model from Agile e6.1.
Load Drawing	Retrieves a drawing from Agile e6.1.
Advanced...	An additional dialog box enabling a more complex loading is displayed.
Opt. structure	Retrieves optional Agile e6.1 structure (external references) to the current object.

Save

Batch	Saves the active Pro/Engineer object, which is already known in Agile e6.1, and updates the metadata set in the background without user interactions (batch mode).
Interactive	Saves the active Pro/Engineer object, which is already known in Agile e6.1, and updates the metadata set in the interactive user mode.
Advanced...	An additional dialog box enabling a more complex saving is displayed.

Create

Part	Creates a new part in Pro/Engineer and a new metadata set to save this part in Agile e6.1.
Assembly	Creates a new metadata set to save the Pro/Engineer assembly in Agile e6.1.

Update Properties

Current	Updates the parameters of the active Pro/Engineer object.
Flat	Updates the parameters of the active Pro/Engineer object and (if any) for the children of the first level.
Recursive	Updates the parameters of the active Pro/Engineer object and (if any) for the children of all levels below.
Family	Updates the parameters of the active Generic and all instances.

Part

Switch to Local	Switches from saving the work with the fileserver to local saving.
Switch to Vault	Switches from local saving of the work to saving with the fileserver.

Remove PLM Info	Separates the active Pro/Engineer object from its Agile e6.1 metadata set. When the object is saved again to the Agile e6.1 vault, a new metadata set will be created (e.g. the new CAD-file receives a new document-ID). The old file name is still linked to the old metadata set.
User → PLM	The active Pro/Engineer object is added to an existing object in Agile e6.1. A check is run to ensure that the targeted data set is unique. If this check fails – i.e. more than one data set meets the search criteria –the correct data set has to be selected manually.
Reserve	Reserves the active Pro/Engineer object.
Reset Reservation	Disables the reservation of the active Pro/Engineer object.

Assembly

Switch to Local	Switches from saving the work with the fileserver to local saving
Switch to Vault	Switches from local saving of the work to saving with the fileserver
Remove PLM Info	Separates the active Pro/Engineer object from its Agile e6.1 metadata set. When the object is saved again to the Agile e6.1 vault, a new metadata set will be created (e.g. the new CAD-file receives a new document-ID). The old file name is still linked to the old metadata set.
User → PLM	The active Pro/Engineer object is added to an existing object in Agile e6.1. A check is run to ensure that the targeted data set is unique. If this check fails – i.e. more than one data set meets the search criteria –the correct data set has to be selected manually.
Reserve	Reserves the active Pro/Engineer object and its assembly structure.
Reset Reservation	Disables the reservation of the active Pro/Engineer object and its assembly structure.

Drawing

Update Titlebox	Updates the content of the titlebox (frame).
History	Adds history information from Agile e6.1.
Switch to Local	Switches from saving the work with the fileserver to local saving.
Switch to Vault	Switches from local saving of the work to saving with the fileserver.

Remove PLM Info	Separates the active Pro/Engineer object from its Agile e6.1 metadata set. When the object is saved again to the Agile e6.1 vault, a new metadata set will be created (e.g. the new CAD-file receives a new document-ID). The old file name is still linked to the old metadata set.
User → PLM	The active Pro/Engineer object is added to an existing object in Agile e6.1. A check is run to ensure that the targeted data set is unique. If this check fails – i.e. more than one data set meets the search criteria –the correct data set has to be selected manually.
Reserve	Reserves the active Pro/Engineer object.
Reset Reservation	Disables the reservation of the active Pro/Engineer object.

Item

Create / Update	Creates or updates an item.
Assign	Assigns the PLM dataset of a document describing a 3D-Model to an item.
B.O.M.	Creates or updates the BOM in PLM for an assembly.

Tools

Debug	Enables debug mode (Batch, Interactive, Close).
Reload Config	Reads the content of configuration files (e.g. EcpCustomer.ini).
Clear Temp	Removes all files from the local TMP-directory of the user.
OvrCnC	Overwrites the concurrent conflict when trying to save a Pro/Engineer object.
Clear Memory	Updates the internal memory lists.
File CKI	Enables checking in files.
Start PLM	Starts the Agile e6.1 client.
Stop PLM	Stops the Agile e6.1 client.
Popup PLM	Opens the Agile e6.1 client window.

Info

Info	Displays metadata set information about the currently active object in Pro/Engineer. The button “ext Ref Info” opens an information window describing the external references (the content is comparable to the Global Reference Viewer of Pro/Engineer).

Chapter 3

Save and Load CAD Files

The PLM system establishes Agile e6.1 objects (parts/documents) for each CAD object. Its content derives from this object type (3D model, 2D drawing, item). Such Agile objects have a reference to at least one CAD file that can be stored in a dedicated vault or locally in the network.

Create, Load, and Save Objects

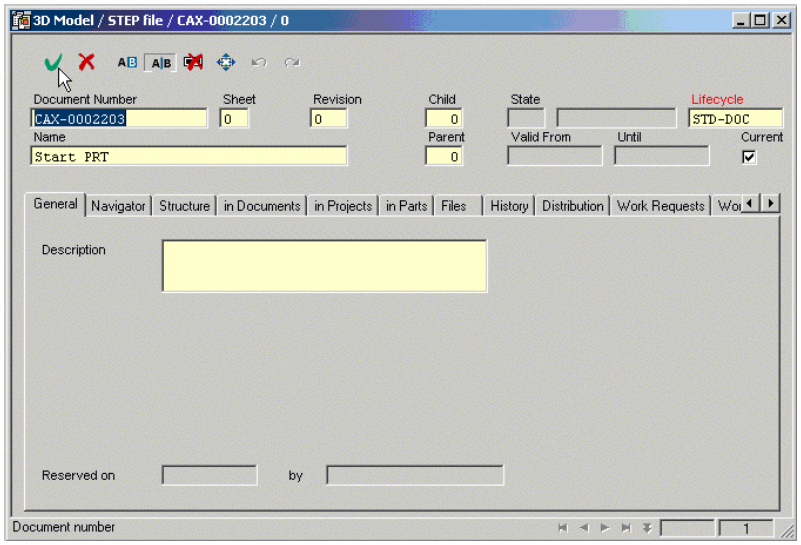
Create an Agile Object for a New Part / New Assembly

This ensures a consistent data management in an early state throughout the company. This example describes first how an Agile e6.1 object is created in the PLM system and then how a drawing is created in CAD system and a file is attached to the Agile object.

1. Select from the Pro/Engineer main menu Agile > Create > Part / Assembly.

   The PLM window is opened and displays a standard form containing the default metadata of the new part /assembly.

2. Fill in all mandatory fields and save the entry.



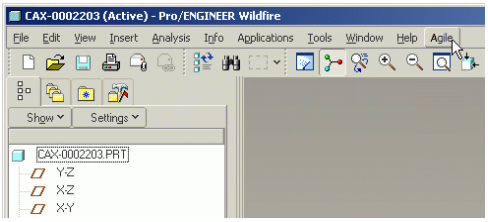
   ECP automatically adds the following information to the mask:

- File name (Pro/Engineer model name)
- Search path
- File type

   The following entries are entered automatically in the PLM document history:

- Creator
- Date of creation
- Creation system

3. The Pro/Engineer window is opened and the new part / new assembly is ready for editing.



4. To store the part / assembly, select Agile > Save > Batch.

   The CAD file will be checked into the vault. This prevents to reopen the form containing the respective Agile e6.1 object.

   All necessary parameters are updated.

Note	If you want to modify the information of the Agile e6.1 object (e.g. the description), select Agile > Save > Interactive.

Load a Pro/Engineer Object

You can load any Pro/Engineer object managed by Agile e6.1, provided that the object is known in Agile e6.1 and the file is stored in a vault.

When loading objects, the following options are available:

- 3D-model:

  PLM > Load > Model

- Drawing:

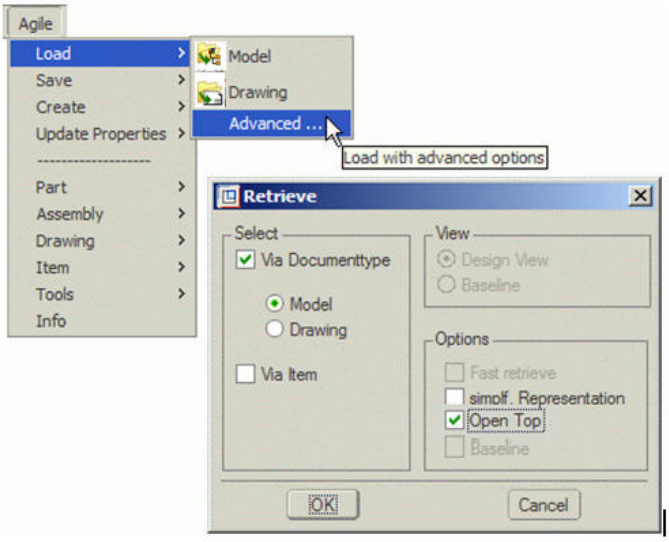
  PLM > Load > Drawing

- Dialog Window:

  PLM > Load > Advanced

Load with Advanced Mode

With the “Advanced” mode further criteria for loading objects (e.g. load model in design view) can be combined.



The following combinations are NOT possible:

- “Fast retrieve” AND “Baseline”
- ”Simplified Representation” AND “Open Top”

The CAD manager can initialize this dialog window with default values using the section "Initialize" in the file EcpCustomer.ini.

Note	Important information about the loaded objects can be found in the Pro/Engineer message line.

Save a Modified Pro/Engineer Object

If the Pro/Engineer object has been modified in the CAD system, you need to check in the changes into the Agile e6.1 system and update the Agile object. This can be done in standard mode (with default settings), or in advanced mode (manually defining the save criteria).

Save in Standard Mode

A modified object is already known in the Agile e6.1 system. A document record containing the Agile object already exists.

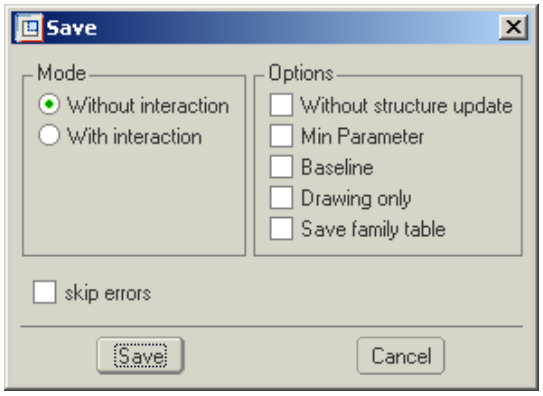
You can save with the default settings (e.g. the automatic number generator) in Batch mode.

Note	If saving the object via network to the central Agile e6.1 vault is too slow, store this object in a local directory <cax_work> which is also managed by Agile e6.1 — select Agile > Object > Fileserver > Local. If you then want to use the vault, select Agile > Object > Local > Fileserver.

Save in Advanced Mode

With the “Advanced” option you can combine further criteria for saving objects.

Select Agile > Save > Advanced.



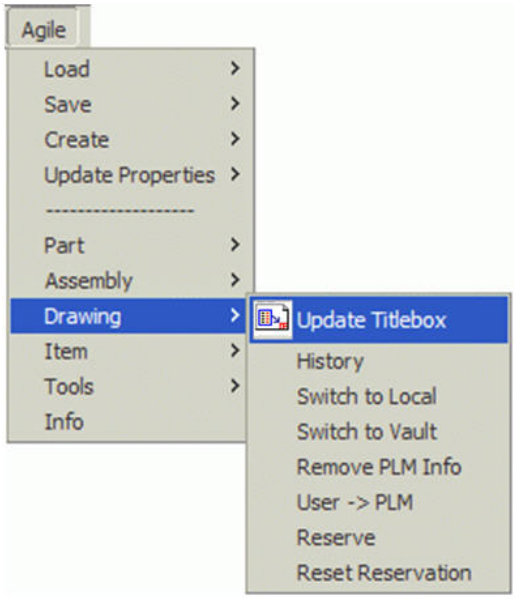
The possible options depend on the actual context. Irrelevant fields are grayed out

Note	In order to use the “Baseline” option, your CAD-manager needs to adapt the general settings. He also must decide whether the option “skip errors” is activated by default or not. If activated, no further inquiry follows, especially in case of an access problem. The faulty object is skipped.

Update a Pro/Engineer Drawing

The content of company specific frames can be supplemented with data stored in Agile e6.1. This is an aspect of the parameter transfer functionality. It is also possible to transfer parameter data using the integration.

To update the titlebox content with data stored in Agile e6.1, select Agile > Drawing > Update Titlebox.



Note	The content of titlebox fields like document number, document name, creator‘s name, and date is stored in Agile e6.1.Therefore, you always have to use the PLM system when changing some of this content!

To store an updated drawing select Agile > Save > Batch. Necessary data of this object and its drawing are already known in the PLM system.

Duplicating an Object Known in Agile e6.1

Sometimes development efforts can be reduced by starting with known objects and modifying them. These objects are already stored in Agile e6.1.

1. Load the desired 3D model using the PLM system.
2. Select Agile > Part / Assembly > Remove PLM Info.

   The loaded active object is no longer known in Agile e6.1.
3. Select Agile > Save > Interactive.
4. A blank 3D-model mask is opened in the Agile e6.1 client.
5. Fill in the mandatory fields and save it.

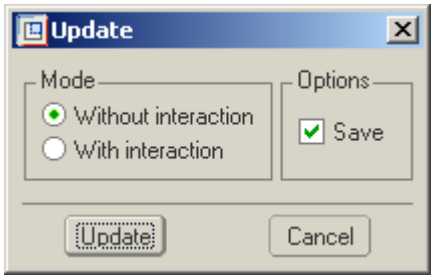
   The duplicated object is checked in and the Pro/Engineer window is opened again.

Assign a User Object to PLM Data

It is possible to assign a user object to an existing Agile e6.1 metadata set (an Agile e6.1 document).

1. Select Agile > Part / Assembly > User -> PLM.

   The Update window is opened.



- With interaction

  Enables to modify the information in Agile e6.1.
- Without interaction

  Enables to save immediately.

2. Click Update.

Chapter 4

Create a BOM

If a CAD object is known in Agile e6.1 then it is possible to create an Agile e6.1 data set describing an associated item. Of course this does not work with generic objects but with each member of the family table that represents a physical part.

Create / Update an Item

1. Select a Pro/Engineer object and select Agile > Item > Create/Update.

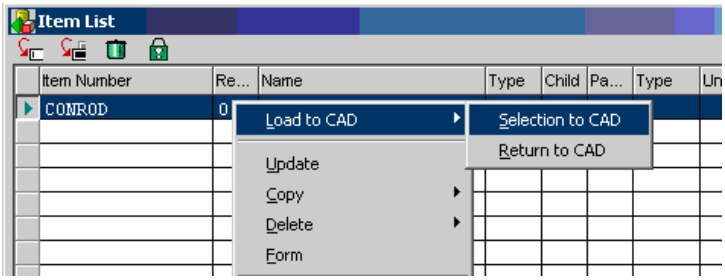
   This opens the Item mask in edit mode in Agile e6.1.

2. Fill in all mandatory fields of the new part and save the entry.

Assign an Item

It is also possible to create an item in Agile e6.1 first and then assign a 3D model:

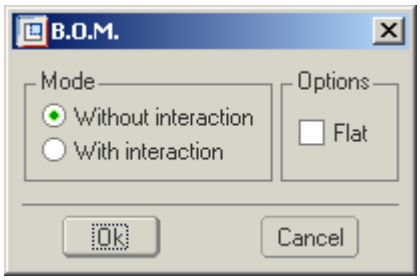
1. Select Agile > Item > Assign.
2. Agile e6.1 runs a test to check if this relationship already exists. If not, an empty Item List is opened.
3. Search for the desired item.
4. Create the relation. Select Load to CAD > Selection to CAD from the context menu.



Generate a BOM

1. To assign a Bill of Material, select Agile > Item > B.O.M.

The BOM. window is opened. The BOM list can be create in the background (Without interaction) or interactively (With interaction).



- With interaction – enables to modify the information in PLM.
- Without interaction – enables to save immediately.
- Flat - to get a flat BOM, i.e. only at the first level or a multilevel BOM.

Chapter 5

Monitor the Integration

1. To activate detailed monitoring of all activities, select Agile > Tools > Debug > Batch.

   All activities running internally will be written into 2 trace files:

- cax_<processnumber>.trc
- ecp_<processnumber>.trc

Note	You can also select Agile > Tools > Debug > Interactive. Compared to the Batch mode in the Interactive mode every step is reflected in the trace file and in the Pro/Engineer message line. When saving an object, an additional form is opened in an Agile e6.1 window, describing the files to be checked in and associated to the Agile e6.1 document. It allows supplementing several information before completing the check in process.

2. To finish monitoring, select Agile > Tools > Debug > Close.

   The trace files are finished. It is recommended to trace only problems in a session.

Note	To get the actual settings of your session using the above features, start debugging in batch mode and select Agile > Tools > Reload Config. All settings will be written into the trace file.

3. Close the debug mode.

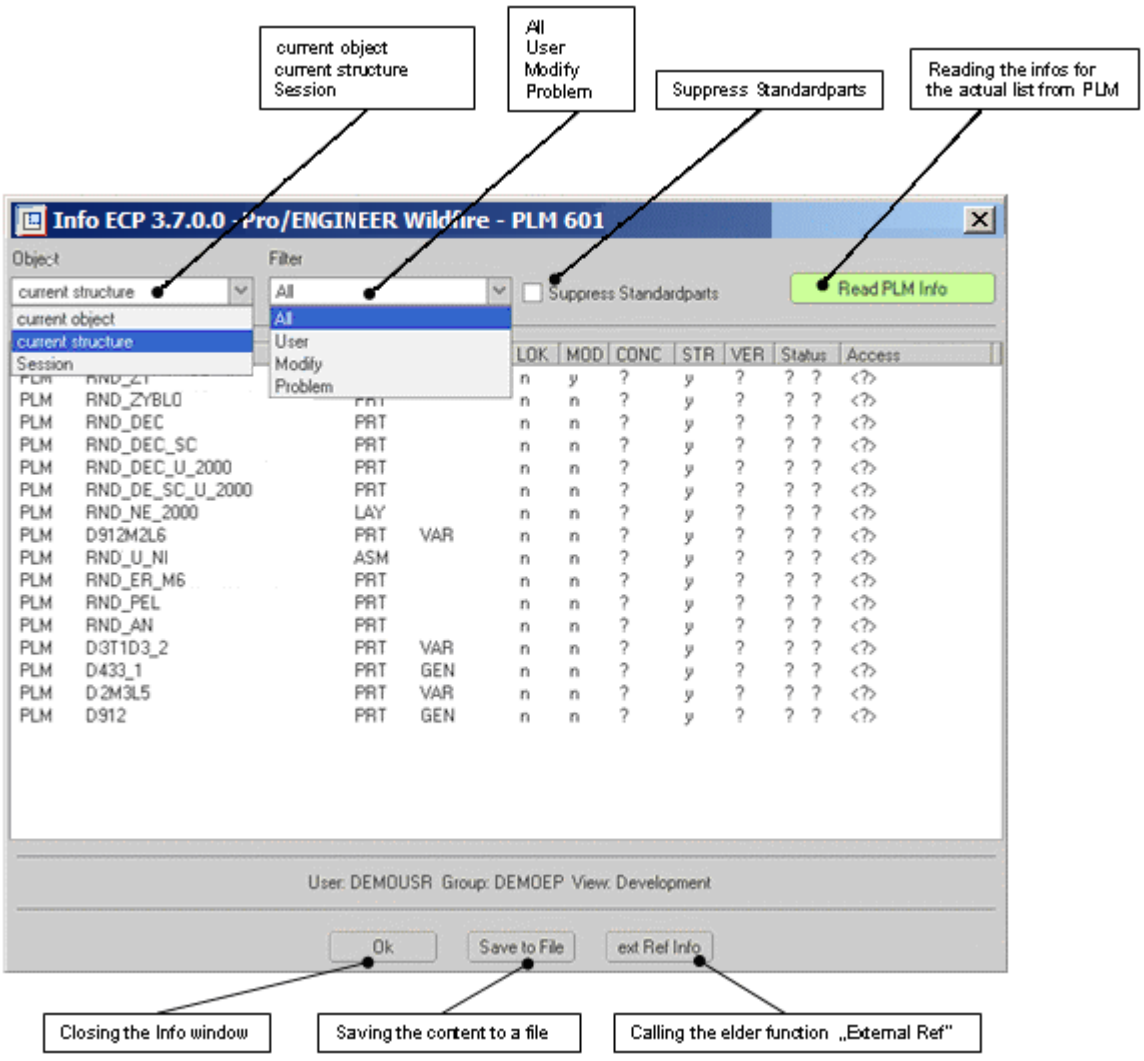
Chapter 6

Appendix

Getting Information

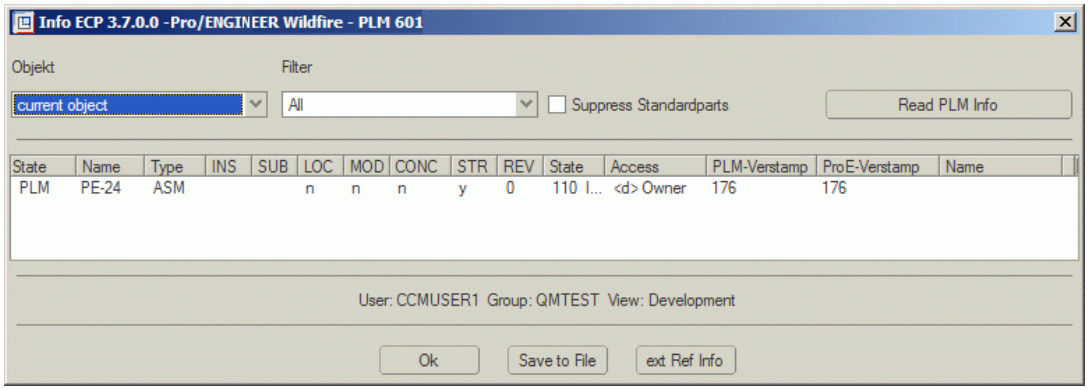
To get information about the current object, the current assembly structure, or all objects in the CAD session, select Agile > Info.

The following window is opened:

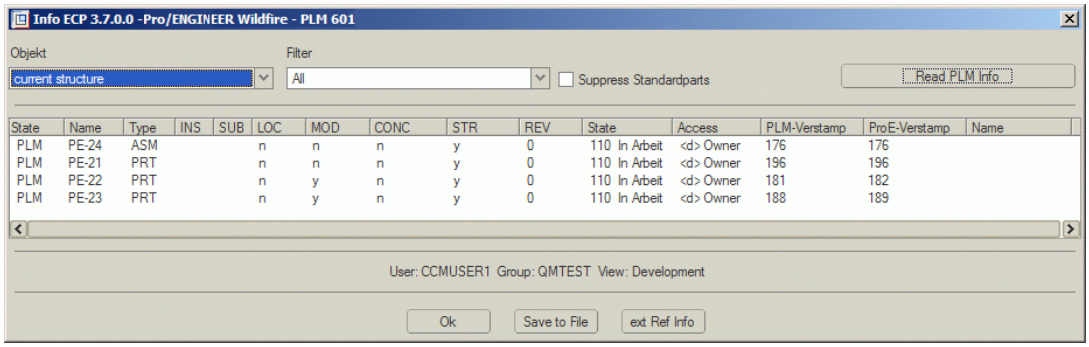


This window displays information about the current object. If a connection to Agile e6.1 exists, the object information is retrieved automatically.

If "current structure" or " Session" is selected using the object selection, only the information within the ECP is displayed in the information list (no data exchange with Agile e6.1). The list is generated very quickly, even in case of larger structures.


Info ECP 3.7.0.0 -Pro/ENGINEER Wildfire - PLM 601
Objekt
Filter
current object
All
Suppress Standardparts
Read PLM Info
State Name Type INS SUB LOC MOD CONC STR REV State Access PLM-Verstamp ProE-Verstamp Name
PLM PE-24 ASM n n n y 0 110 I... <d> Owner 176 176
User: CCMUSER1 Group: QMTEST View: Development
Ok
Save to File
ext Ref Info

The Agile e6.1 data can be read out by pressing the Read PLM Info button; this always refers to the entries in the list that are currently displayed.


Info ECP 3.7.0.0 -Pro/ENGINEER Wildfire - PLM 601
Objekt
Filter
current structure
All
Suppress Standardparts
Read PLM Info
State Name Type INS SUB LOC MOD CONC STR REV State Access PLM-Verstamp ProE-Verstamp Name
PLM PE-24 ASM n n n y 0 110 In Arbeit <d> Owner 176 176
PLM PE-21 PRT n n n y 0 110 In Arbeit <d> Owner 196 196
PLM PE-22 PRT n y n y 0 110 In Arbeit <d> Owner 181 182
PLM PE-23 PRT n y n y 0 110 In Arbeit <d> Owner 188 189
User: CCMUSER1 Group: QMTEST View: Development
Ok
Save to File
ext Ref Info

Use the filter selection to reduce the list of objects.

- VAR:

  Indicates whether an object is a instance (VAR) or generic (GEN)

- VER:

  Version number in Agile e6.1

- Status:

  Current status in Agile e6.1

If an object is reserved, the user ID of the person who reserved it is displayed in the Access column.

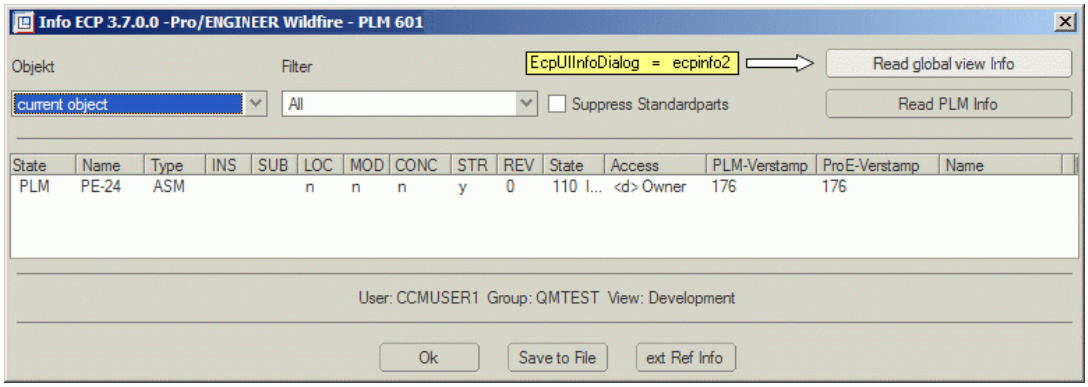
Optionally, a Pro/Engineer parameter can be displayed in the last column of the list. The name of this parameter is defined in EcpCustomer.ini ("Initialize" section):

```
EcpInfoCustParameter = NONE    or   <NAME of the parameter>
```

In addition to the USER/PLM status, there is a new status "???" for objects that have not been found (because in the current version view it is not visible or it has been deleted). These objects are always shown if the "Problem" filter is used (regardless of whether they have been modified or not).

To read out the information for objects that are invisible due to the current version view, an extra button "Read global view Info" can be displayed in the Info function. To initialize this, insert the following line in EcpCustomer.ini ("Initialize" section):

```
EcpUIInfoDialog  =  ecpinfo2
```


Info ECP 3.7.0.0 -Pro/ENGINEER Wildfire - PLM 601
Objekt
Filter
EcpUIInfoDialog = ecpinfo2
Read global view Info
current object
All
Suppress Standardparts
Read PLM Info
State Name Type INS SUB LOC MOD CONC STR REV State Access PLM-Verstamp ProE-Verstamp Name
PLM PE-24 ASM n n n y 0 110 I... <d> Owner 176 176
User: CCMUSER1 Group: QMTEST View: Development
Ok
Save to File
ext Ref Info

Note	The integration needs to be restarted to show the new button.

Read globale view Info:

The ext Ref Info button calls the previous function "External Ref" after closing the Info dialog box.